

STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

	DATE:	March 29, 2016
FROM:	Melilotus M. Dube Environmental Manager	AT (OFFICE): Department of Transportation
SUBJECT	Dredge & Fill Application Gilford, 16279	Bureau of Environment
TO	Gino Infascelli, Public Works Permitting Officer New Hampshire Wetlands Bureau 29 Hazen Drive, P.O. Box 95 Concord, NH 03302-0095	

Forwarded herewith is the application package prepared by NH DOT Bureau of Highway Design for the subject major impact project. This project is classified as major per Env-Wt 303.02(f). The project consists of replacing the existing undersized concrete box culvert carrying NH Route 11A over West Alton Brook in the Town of Gilford with a Stream Crossing Rules compliant structure. This work is necessary to maintain the integrity of the crossing and to allow for increased safety for the traveling public, pedestrians and NHDOT maintenance crews.

The lead people to contact for this project are Tobey Reynolds, Highway Design (271-2171 or treynolds@dot.state.nh.us) or Meli Dube, Environmental Manager, Bureau of Environment (271-3226 or mdube@dot.state.nh.us).

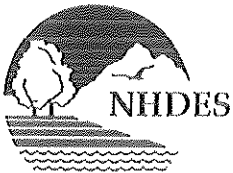
This project was presented at Natural Resource Agency Meetings on April 15, 2015 and October 21, 2016, see enclosed minutes. Mitigation was discussed with Lori Sommer at the Department of Environmental Services on February 24, 2016 and will total \$27,360.00. to be paid upon receipt of the permit approval notice.

A payment voucher has been processed for this application (Voucher #434561) in the amount of \$1,060.00.

If and when this application meets with the approval of the Bureau, please send the permit directly to Meli Dube, Environmental Manager, Bureau of Environment.

MRU:mmd
Enclosures

cc:
BOE Original
Carol Henderson, NH Fish and Game
Michael Hicks, US Army Corps of Engineers
Maria Tur, US Fish and Wildlife Service
Mark Kern, Environmental Protection Agency
District Construction Engineer, NHDOT Bureau of Construction
Contract Administrator, NHDOT Bureau of Construction
Town of Gilford (4 copies via certified mail)
Edna Feighner, NH Division of Historical Resources

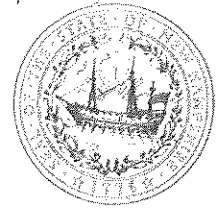


WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau

Land Resources Management

Check the status of your application: <http://des.nh.gov/onestop>



RSA/Rule: Env-Wt 100-900

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1. REVIEW TIME:

Indicate your Review Time below. Refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact)

☐ Expedited Review (Minimum Impact only)

2. PROJECT LOCATION:

Separate applications must be filed with each municipality that jurisdictional impacts will occur in.

ADDRESS: **NH Route 11A (just west of Gilford/Alton town line & Reed/County Rds.)** TOWN/CITY: **Gilford**

TAX MAP: **n/a**

BLOCK: **n/a**

LOT: **n/a**

UNIT: **n/a**

USGS TOPO MAP WATERBODY NAME: **West Alton Brook**

☐ NA

STREAM WATERSHED SIZE: **1.58 sp. mi.**

☐ NA

LOCATION COORDINATES (If known): **43°31'59.8" N, 71°19'21.4" W**

☒ Latitude/Longitude

☐ UTM ☐ State Plane

3. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

Replacement of existing 1930s era 31' x 9' x 5' conc. box culvert with 43' x 16' x 8' (2' embedded) concrete box culvert, placed on skew to match overall natural course of West Alton Brook. Prime wetlands have been identified at and around this crossing, see attached Prime Wetland Delineation and Impacts Discussion located elsewhere in this application for details regarding Prime Wetlands in the project area.

4. SHORELINE FRONTAGE

☒ NA This lot has no shoreline frontage.

SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

5. RELATED PERMITS, ENFORCEMENT, EMERGENCY AUTHORIZATION, SHORELAND, ALTERATION OF TERRAIN, ETC...

n/a

6. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: **NHB 16 - 0350**

b. ☐ Designated River the project is in ¼ miles of: _____; and
date a copy of the application was sent to the Local River Management Advisory Committee: Month: ____ Day: ____ Year: ____

☒ NA

shoreland@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

7. APPLICANT INFORMATION (Desired permit holder)			
LAST NAME, FIRST NAME, M.I.: Reynolds, Tobey			
TRUST / COMPANY NAME: NHDOT		MAILING ADDRESS: 7 Hazen Dr., P.O. Box 483	
TOWN/CITY: Concord		STATE: NH	ZIP CODE: 03302-0483
EMAIL or FAX: treynolds@dot.state.nh.us		PHONE: 271-2171	
ELECTRONIC COMMUNICATION: By initialing here <u>TR</u> , I hereby authorize NHDES to communicate all matters relative to this application electronically			
8. PROPERTY OWNER INFORMATION (If different than applicant)			
LAST NAME, FIRST NAME, M.I.:			
TRUST / COMPANY NAME:		MAILING ADDRESS:	
TOWN/CITY:		STATE:	ZIP CODE:
EMAIL or FAX:		PHONE:	
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically			
9. AUTHORIZED AGENT INFORMATION			
LAST NAME, FIRST NAME, M.I.: Dube, Melilotus M.		COMPANY NAME: NHDOT	
MAILING ADDRESS: 7 Hazen Dr., P.O. Box 483			
TOWN/CITY: Concord		STATE: NH	ZIP CODE: 03302-0483
EMAIL or FAX: mdube@dot.state.nh.us		PHONE: 271-3226	
ELECTRONIC COMMUNICATION: By initialing here <u>MD</u> , I hereby authorize NHDES to communicate all matters relative to this application electronically			
10. PROPERTY OWNER SIGNATURE:			
See the Instructions & Required Attachments document for clarification of the below statements			
By signing the application, I am certifying that:			
<ol style="list-style-type: none"> 1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application. 2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document. 3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900. 4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type. 5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative. 6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47. 7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to be reviewed for the presence of historical/ archeological resources. 8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project. 9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate. 10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action. 11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining. 12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail. 			
 Property Owner Signature		 Print name legibly	3/29/2016 Date

MUNICIPAL SIGNATURES

11. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

	Print name legibly	Date
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DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

12. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

	Print name legibly	Town/City	Date
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DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

13. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland	325	<input type="checkbox"/> ATF	100	<input type="checkbox"/> ATF
Scrub-shrub wetland		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Emergent wetland		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Wet meadow		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Intermittent stream		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Perennial Stream / River	700 / 49	<input type="checkbox"/> ATF	350 / 21	<input type="checkbox"/> ATF
Lake / Pond	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Intermittent stream	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Perennial stream / River	935 / 107	<input type="checkbox"/> ATF	385 / 41	<input type="checkbox"/> ATF
Bank - Lake / Pond	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Tidal water	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Salt marsh		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Sand dune		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Prime wetland	2050 / 216	<input type="checkbox"/> ATF	455	<input type="checkbox"/> ATF
Prime wetland buffer		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Undeveloped Tidal Buffer Zone (TBZ)		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Previously-developed upland in TBZ		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - Lake / Pond		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - River		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - Tidal Water		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
TOTAL	4010 / 372		1290 / 62	

14. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of \$ 200

☒ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking) 5300 sq. ft. X \$0.20 = \$ 1,060.00

Temporary (seasonal) docking structure: sq. ft. X \$1.00 = \$

Permanent docking structure: sq. ft. X \$2.00 = \$

Projects proposing shoreline structures (including docks) add \$200 = \$

Total = \$ 1,060.00

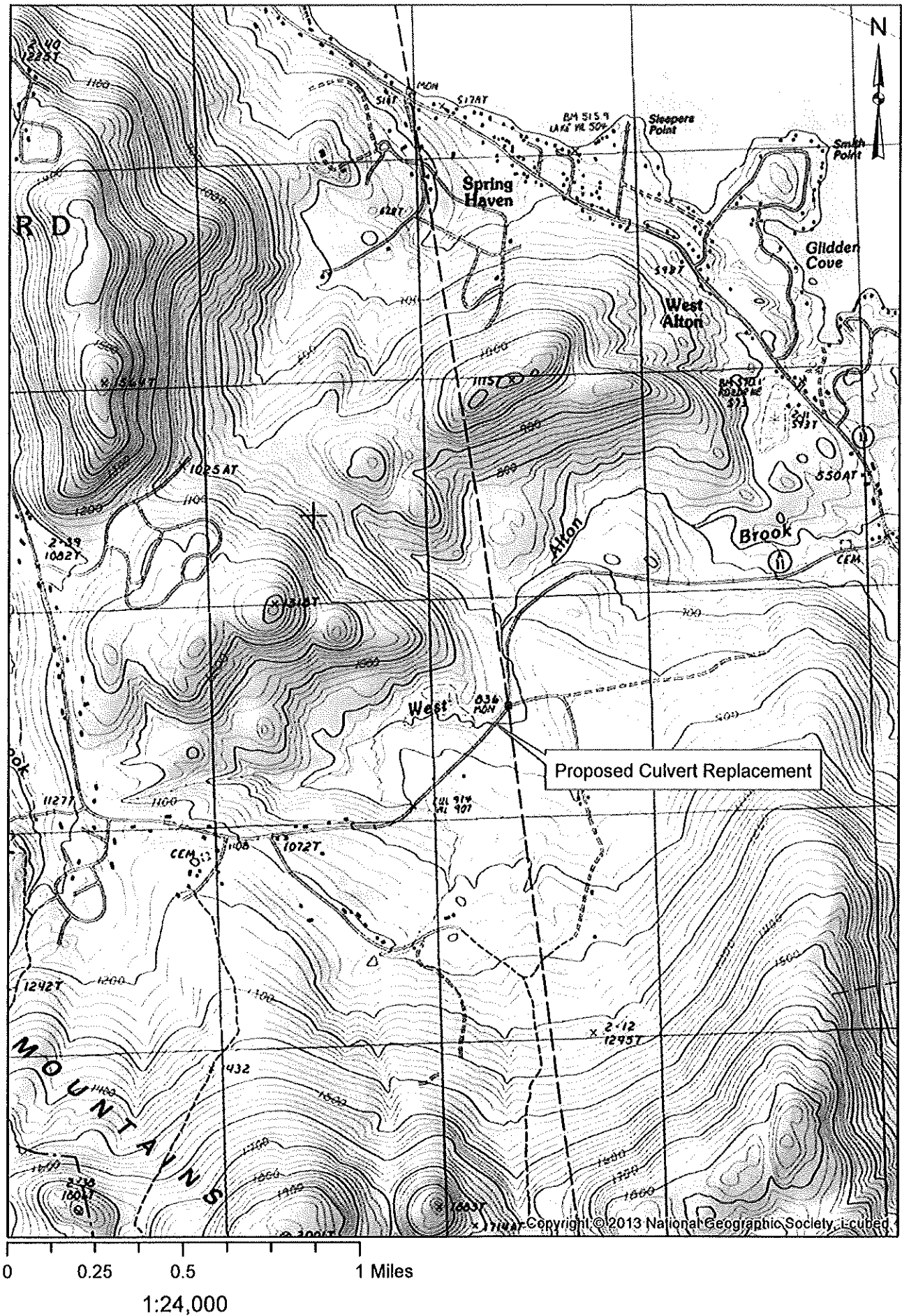
The Application Fee is the above calculated Total or \$200, whichever is greater = \$ 1,060.00

shoreland@des.nh.gov or (603) 271-2147

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Gilford 16279



WETLANDS PERMIT APPLICATION – ATTACHMENT A

MINOR AND MAJOR - 20 QUESTIONS

Water Division/ Wetlands Bureau/ Land Resources Management

Check the Status of your application: <http://des.nh.gov/onestop>



RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The 2009 inspection report for this 1930's era 31' long x 9' wide x 5' high concrete box culvert, indicates the condition as State Red list, with the deck, superstructure, and culvert condition rated 'poor'. The deteriorated guardrail system was temporarily replaced with concrete barrier after being damaged. A permanent guardrail solution is required for safety and maintenance reasons. The current width is 28' curb to curb. The existing dimensions of the culvert do not allow for safe and efficient maintenance. The proposed lengthening of the culvert will increase the shoulders from 2' to 4', to provide a 32' curb to curb width to better accommodate plowing, pedestrians and bicyclists. The 80 year old structure could potentially be rehabilitated with capacity improved by adding a 4' x 4' box culvert adjacent to the existing; however given the age and condition of the existing culvert, replacement would appear to be a better investment.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

Based on stream crossing rules a 16' wide replacement structure is recommended. The estimated minimal length would be roughly 35' to accommodate 2 – 11' travel lanes with 4' shoulders plus guardrail. Note that several additional issues warrant consideration in regard to structure replacement: the current culvert does not align well with the natural stream geometry at the inlet; two driveways immediately east of the present culvert make protection of the clear zone over the culvert a design challenge and concern; and the location straddles a municipal prime wetland.

The proposed alternative is an 43' long x 16' wide x 8' high concrete box embedded two feet into the streambed, which allows greater capacity than the existing 9' x 5' non-embedded box culvert.

3. The type and classification of the wetlands involved.

R2UB1,2 (Riverine Lower Perennial Unconsolidated Bottom Cobble-Gravel, Sand), PFO1/EM1E (Palustrine Forested Broad-Leaved Deciduous/Palustrine Emergent Persistent Seasonally Flooded/Saturated), BANK; some of which is Prime Wetland

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The wetlands impacted primarily involve the streambed and associated banks of West Alton Brook. Designated Prime Wetlands are located at the inlet side of the crossing and extend to the west, including a nearby beaver impoundment.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

The wetland types found at the crossing are common in the State of New Hampshire, however, Designated Prime Wetlands are located on the inlet side of the crossing. Refer to the attached Prime Wetland Delineation and Impacts Discussion included elsewhere in this application.

6. The surface area of the wetlands that will be impacted.

Permanent wetland impacts = 1025 SF

Permanent non-wetland impacts = 935 SF

Temporary wetland impacts = 835 SF

Permanent prime wetland impacts = 2050 SF

Temporary prime wetland impacts = 455 SF

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7. The impact on plants, fish and wildlife including, but not limited to:
- a. Rare, special concern species;
 - b. State and federally listed threatened and endangered species;
 - c. Species at the extremities of their ranges;
 - d. Migratory fish and wildlife;
 - e. Exemplary natural communities identified by the DRED-NHB; and
 - f. Vernal pools.

The project has been reviewed by the NH Natural Heritage Bureau and the US Fish and Wildlife Service.

- a. There are no rare species or species of special concern within the project area
- b. The USFWS Information for Planning and Conservation tool (Consultation Code 05E1NE00-2016-SLI-0913) identified the northern long-eared bat (NLEB) and the small-whorled pogonia, both federally threatened species, as having potential to be present in the project area. The USFWS Section 7 Online Review Tool indicated that Town of Gilford, in which the project is located, does not have known occurrences of small-whorled pogonia. Additionally, the project impact area does not include the specific habitat known to support small-whorled pogonia, as most of the disturbance will occur within the stream channel and banks. As such, there will be no impacts to this species as a result of the proposed work. See the attached Section 7 Online Review Tool "No Species Present" letter located elsewhere in this application package. The project meets the criteria for the USFWS Range-wide Programmatic Informal Biological Assessment for NLEB and May Affect but is Not Likely to Adversely Affect NLEB according to the Range-wide Programmatic Information Consultation Form which has been submitted to USFWS for review. This finding is a result of the commitment to perform all clearing of suitable habitat trees during the winter hibernation. Please find supplementary documentation of this coordination elsewhere in the application package.
- c-f. The project area does not contain any of the following: species at the extremities of their ranges; migratory fish or wildlife which may be impacted by the work; exemplary natural communities; vernal pools.

8. The impact of the proposed project on public commerce, navigation and recreation.

West Alton Brook is not large enough for public commerce or navigation. The lands around the culvert outside the Right of Way are privately owned and the existing NH Route 11A is narrow in the culvert area, which creates an existing unsafe condition for pedestrians and bicyclists. The proposed structure, which calls for larger shoulder, will allow for safer passage for recreational activities at the crossing, including pedestrians and bicyclists.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The culvert is located in a rural, forested area adjacent a private residence and a maple sugar/ fire wood business. Disturbed bank and channel areas will be stabilized with geotextile material and stone. Filled areas in the vicinity of the old culvert channel will receive humus and re-seeded. There will be no long term impacts to the aesthetic value of the area.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

As noted in #8, West Alton Brook is not large enough for public commerce or navigation in this area.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

Re-aligning the inlet channel to better align with the natural stream flow and increasing the cross sectional flow area should reduce erosion at the inlet entrance that abuts the residential drive. Disturbed streambed and bank areas will be stabilized with stone lining to minimize stream erosion and reduce outlet velocity. The former channel will be filled in, loamed and re-vegetated. The new culvert location and increased length will assist in improving sight distance out of the two adjacent driveways.

12. The benefit of a project to the health, safety, and well being of the general public.

The increased cross sectional culvert area will improve water passage and reduce inlet erosion; additional culvert length will provide a safer clear zone for vehicles, pedestrians and bicyclists, improve driveway sight distance, and reduce potential to place maintenance workers in or adjacent to the road to make guardrail repairs. Proposed embedment will eliminate the current outlet 'perch' and improve aquatic organism passage.

13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

This project should result in reduced bank erosion, improved sediment transport, and improved surface water quality as a result of providing a greater cross sectional area, more natural channel alignment, and profile. Stormwater runoff will be addressed via the construction of a berm which will help guide and filter stormwater flowing off of NH Route 11A before entering West Alton Brook.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

This larger 16' x 8' (2' embedded) culvert opening will be less restrictive than the existing 9' x 5' culvert and the alignment will more closely simulate the natural stream channel cross section, with velocities and depths encouraging improved sediment transport conveyance. Lastly, the larger cross sectional area is still smaller than the cross sectional area of the two downstream structures.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

Re-alignment of the stream channel to better match the natural channel should reduce re-direction of wave energy caused by the currently kinked alignment at the inlet.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

There are only two property owners on this project, one on the inlet side and one at the outlet side. Both properties are divided by West Alton Brook. A significant portion of the single rural property at the culvert inlet is depicted on the wetland plan as designated prime wetland, while an equally significant portion of the property at the outlet is delineated wetland. The portion of wetland impacted by this project is very small compared to the total wetland areas depicted on the remaining portion of private properties. Additionally, there are no private crossings in the vicinity of the project area, so it is unlikely that a private landowner would propose the same kind of work proposed by NHDOT.

Design of this crossing minimizes adverse impacts while improving road safety, hydraulic capacity, and the stream crossing's similarity to the natural stream channel.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

Beaver dams areas located further upstream of the project may be the more valuable part of the Prime Wetlands and will remain unimpacted by the project. Best Management Practices will be used to minimize the impact of the proposed work during construction, and the resulting project will correct the existing outlet perch and erosion issues at the inlet and realign the stream to better match the natural alignment of West Alton Brook, which will improve surface water quality and aquatic organism passage. Additionally, the proposed box culvert will be installed with a 2 foot embedment to allow for a simulated stream bottom to match the natural condition.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

This project is not located in or near any of the following Natural Landmarks listed on the National Register: Lake Umbagog East Inlet and Floating Island, Pondicherry Wildlife Refuge, Franconia Notch, Nancy Brook Scenic Area, Heath Pond Bog, Madison Boulder, White Lake Pitch Pine Forest, Mount Monadnock, Rhododendron Natural Area, and Spruce Hole Bog.

19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

The project area itself has no national designation, and Lake Winnepesaukee (which West Alton Brook flows into) is not a National Lakeshore.

20. The degree to which a project redirects water from one watershed to another.

This project will not redirect water from one watershed to another.

Additional comments

The replacement culvert will more closely match the natural stream channel in alignment, width, and materials, and is an improvement over the existing culvert.

shoreland@des.nh.gov or (603) 271-2147

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Gilford 16279 Prime Wetland Delineation and Impacts Discussion

This project is located partially within designated Prime Wetland #3 in the Town of Gilford, which does not have an elective Prime Wetland Buffer Zone. There has been a history of coordination regarding the accuracy of the existing Prime Wetland delineation and potential impacts associated with this project dating back to 2007. The original scope of work proposed in this application involved only repair and extension of the existing box culvert carrying NH Route 11A over West Alton Brook; however, the scope has evolved to include full replacement and relocation in order to accommodate all structural, spatial and environmental concerns in this area.

Included in this application package are plans detailing both existing Prime Wetland delineations and NHDOT proposed Prime Wetland delineations. Please note that all impact plans are based off of the Department proposed Prime Wetland delineation. The accuracy of the existing Prime Wetland delineations were first called in to question by the Department and the Department of Environmental Services due to the inclusion of a significant portion of the roadway and non-hydrologically connected pocket wetlands located on the east side of NH Route 11A, as well as the fact that the existing Prime Wetland delineation does not actually include West Alton Brook at the crossing but lies just south of the culvert within the roadway.

The Town of Gilford identified four primary functions of this Prime Wetland, including high shoreland anchoring potential, high sediment trapping potential, high nutrient retention potential and relatively high potential to be a groundwater recharge area. In this instance, these functions are largely attributed to the high amount of beaver activity, which has influenced the flow pattern and vegetation upstream of the crossing on the west side of NH Route 11A. The wetland impacts associated with the proposed project are limited to the crossing and immediately adjacent stream channel and banks and will not extend into the beaver impacted area.

The NHDES Wetlands Bureau *Field Inspection Report* completed by Gino Infascelli on September 24, 2008 states that "the area of Prime Wetland downstream of the crossing should not exist as this is only a stream with 8 foot tall banks and mixed vegetation on top including poplar, elm, mountain maple, sensitive fern and some grasses on the west side and sugar maple, red maple and elm with sensitive fern on the east side. Further uphill adjacent to the road on the south side is a pocket of emergent wetlands." The *Field Inspection Report* also indicated that "the Prime Wetland upstream of the crossing on the north side is marsh with deep organic soil."

For these reasons, the Department proposes to redefine the Prime Wetland boundaries to eliminate the areas located downstream of the crossing and within the roadway. On the upstream side, Prime Wetlands are proposed to follow the existing delineated lines and tie in with Delineated Wetlands and Top of Bank which were delineated by the Department's Wetlands Program Manager. This approach ensures that all areas which are influenced by beaver activity and described as valuable above are included in the proposed Prime Wetland lines, while those areas which do not maintain the valuable characteristics, including: inside the existing crossing; the downstream portion of stream which is currently perched at the culvert outlet; the roadway; and the non-hydrologically connected pocket emergent wetlands on the eastern side of the road, are excluded from the Prime Wetland.

Further, the impacts to the proposed Prime Wetland will not permanently inhibit the functions and values of the wetland at this location, as most of the value is associated with the beaver influenced area to the west of the crossing. The area immediately upstream of the crossing, which will be impacted by the work, does not maintain the same characteristics. Temporary and permanent best management practices shall be employed to ensure that no erosion occurs and there shall be no detriment to water quality in the area.

Melilotus Dube

From: Infascelli, Gino <Gino.Infascelli@des.nh.gov>
Sent: Monday, December 14, 2015 12:49 PM
To: Melilotus Dube
Cc: Matt Urban; Sommer, Lori
Subject: RE: NHDOT Gilford 16279 Prime Wetland Re-Delineation

Meli, sorry for the delay. We rec. the plans on Dec. 2 and had limited time since.

I think that removing "Prime Wetlands" from the area that is a road is OK and would be obvious to most people.

I do not know what the difference is in the line types that seem to conflict such as DW (wet area, OHW), and the line with three dots.

As there is no soil test pit information I do not know how or what basis the proposed Prime Wetland line is located or why the area easterly of the road is not Prime.

Since the wetland labeled 7 POW indicates open water I would have to assume the wetland immediately adjacent is very poorly drained soils and probably why the Prime line was originally shown easterly of the road.

Is wetland 6 PFO/ EM located correctly? Maybe the line with 3 dots is confusing me. The standard symbol plane indicates stream or pond but quite frequently indicates that someone saw some surface water the day they were there and did not delineate a jurisdictional limit

Gino
271 2147

From: Melilotus Dube [<mailto:MDube@dot.state.nh.us>]
Sent: Monday, November 30, 2015 1:30 PM
To: Infascelli, Gino
Cc: Matt Urban; Sommer, Lori
Subject: RE: NHDOT Gilford 16279 Prime Wetland Re-Delineation

Gino,

We are working on compiling the wetland application but would like to give you a glance at our proposed prime wetland delineation before submitting the complete package. In the attached PDF, you will find the following sheets:

1. proposed prime wetland line and our proposed impacts
2. existing prime wetland line and existing contours
3. proposed prime wetland and the existing contours

Please let us know if you see any glaring discrepancies with our previous discussions regarding the change to the prime wetland at this location and/or the process for submitting this change for approval. Is this what you would expect to see in terms of plans from us?

I will be sending a hard copy later today as well.

Gino,
Meli

From: Infascelli, Gino [<mailto:Gino.Infascelli@des.nh.gov>]
Sent: Wednesday, October 28, 2015 11:18 AM
To: Melilotus Dube
Cc: Matt Urban; Sommer, Lori
Subject: NHDOT Gilford 16279 Prime Wetland Re-Delineation

The presentation would be the application. This should include the wetland delineation map and be the same as the Prime Wetland line. A quick look at the Prime Wetland file shows the soil as R1a (Ridgebury) but when I checked an old map of that era most of the area was apparently classified as Sc (Scarboro). I suspect that your very wet test pits would look like Scarboro or Whitman as the Whitman series is associated with the Ridgebury. The less wet pits might look like the Leicester Series which is also associated with Ridgebury. These thoughts are based on the older SCS map.

Checking the Prime Wetland Report it states on page iii they were filing the report using very poorly drained soils in accordance with the law at that time.

SCS soil surveys were and are not intended to meet the same criteria as High Intensity Soil Survey. Currently the SCS soil map shows the upstream area as Catden. Using an aerial photo (not geo-referenced) this seems to be about 150 ft. off from how I would interpret the aerial.

The above information shows why the corrections should be based on data collected at the site.

Today's rules note that at least 50% of the prime wetland shall have very poorly drained soils and the remaining poorly drained soils.
I would suggest the new Prime Wetland line could be at the poorly drained / somewhat poorly drained soil line.

The impact on functions and values should be on those listed. Only one function was listed as low at the time of designation.

Once you have a draft of the application including the above information Lori and could have a quick meeting with you.

Gino
271-2147

From: Melilotus Dube [<mailto:MDube@dot.state.nh.us>]
Sent: Wednesday, October 28, 2015 7:15 AM
To: Infascelli, Gino
Cc: Matt Urban
Subject: NHDOT Gilford 16279 Prime Wetland Re-Delineation

Goodmorning Gino,
In reading Chapter 700 of the Wetland Rules (specifically, Env-Wt 703.04) it is our understanding that the next step in re-delineating the prime wetland boundaries associated with West Alton Brook where it passes under NH Route 11A in Gilford is to arrange a meeting with you (NHDES), the local Town government and the local Conservation Commission. At this meeting we intend to present a proposed prime wetland boundary and discuss the history of this project and the functions and values of the prime wetland. If this is correct, we will move forward with organizing a meeting. If this is incorrect, please advise on what the next steps should be to accomplish the re-delineation.
Thank you,
Meli

Melilotus M. Dube
Environmental Manager
NHDOT Bureau of Environment
7 Hazen Drive
Concord, NH 03301
(603) 271-1612
mdube@dot.state.nh.us

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: April 15th 2015

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Matt Urban

Ron Crickard

Marc Laurin

Andrew Benton

Mark Hemmerlein

Anthony Weatherbee

Ralph Sanders

Rebecca Martin

Jason Tremblay

Jim Kirouac

Leah Savage

Kirk Mudgett

Peter Stamnas

Dan Prehemo

ACOE

Michael Hicks

FIIWA

Jamie Sikora

EPA

Mark Kern

NHDES

Gino Infascelli

Lori Sommer

Chris Williams

NH Fish & Game

Carol Henderson

Stantec

Timothy Adams

Jerry Fortin

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(When viewing these minutes online, click on a project to zoom to the minutes for that project)

Mike Hicks asked if mussels have been spotted in the project location, as the project is just over a ¼ mile from the Connecticut River. Carol Henderson said we are waiting for the NHB Report.

Gino Infascelli said that a downstream abutter has had numerous permits and they are all minimum impact, so mussels are unlikely here.

Lori Sommer said that no mitigation would be required.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Raymond, Non-Federal, 29762

Tony Weatherbee provided an overview of the project. The scope of the project is to rehab the bridge that carries NH Rte. 107 over the Lamprey River (146/100). The existing structure is an HB-C that has a 94'-0" length and 65'-4" deck width. Proposed work consists of repairing the undermining at the north abutment by installing a concrete toewall. Temporary scaffolding will be installed to provide access to the bridge bearings so they can be repaired.

Carol Henderson asked if cofferdams will be used. Tony Weatherbee said that they are shown on the plans and permit but they will likely not be used.

C. Henderson asked what time of the year this project would be done. T. Weatherbee said the project would be done in the spring time of 2016. C.Henderson said that April and May could be a concern for Herring.

Lori Sommer said that no mitigation would be required.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Gilford, X-A003, 16279

Leah Savage provided an overview of the project. The existing 9' span x 6' rise x 28' long concrete box culvert was originally constructed in 1930 with no substantial improvements being done since. It is also on the state's red list. The culvert connects West Alton Brook under NH Route 11A and is a Tier 3 Stream. The culvert is part of a 1.58sq mile watershed and is located within prime wetlands. There is no history of flooding at this location or at the downstream structures. The project area consists of steep embankments and a narrow roadway with closely located adjacent drives at both the inlet and outlet which have been problematic for maintenance.

According to the NHDES Stream Crossing Rules (Env-Wt 904.05) the recommended crossing would be a 16-foot span 3 sided structure with a natural stream bottom. This option was explored, however due to the high cost and constructability issues other alternative designs were considered. Multiple designs were looked at conceptually for this site, rehabilitation options as well as replacements. Through hydraulic analysis it was determined that a 12' span x 8' rise culvert with 2' embedment was the minimum size needed to meet hydraulic capacity for the 100 year storm. This sized structure was looked at along two different alignments, one alignment follows the existing culvert whereas the second alignment is skewed to bring the stream back to a more natural alignment. To more closely match the stream crossing recommendation a 16' span x 8' rise culvert with 2' embedment was also considered placed along the two alignments.

Gerard Fortin went on to discuss the specifics of the considered alternatives. Alternative 2 a 12' span x 8' rise with 2' of embedment placed along the skewed alignment. This would be considered as an alternative design. G. Fortin went on to discuss Alternative 5B, a 16' span x 8' rise with 2' embedment x 43' long precast box. This design was built to accommodate guardrail installation. The design meets the 16' span stream crossing recommendation, and mimics the natural bottom by placing 2' of embedded material in the pipe by utilizing baffles to more effectively hold in the material. This alternative is one of the lower cost alternatives and limits the area of wetland impacts. This design shifts the alignment to more naturally match the stream channel.

G. Fortin went on to explain constructability of this culvert. It will be constructed by utilizing alternating one way traffic. The first phase shifts traffic to the north while building the southern half. The second phase then shifts the traffic south while constructing the northern portion.

Total permanent prime wetland impacts total 2,325 sf with 75 sf of temporary wetland impacts. G. Fortin noted that the prime wetland delineation includes the prime wetland being located over the existing roadway.

Mike Hicks questioned if there would be impacts to the 100 year flood plain. G. Fortin responded that this design will improve the history of flooding. M. Hicks followed up, asking if there would be any new fill to accommodate for loss of flood storage. G. Fortin responded that this would be addressed, but we believe that it all will balance out. M. Hicks then inquired as to how flow would be maintained throughout construction. G. Fortin explained that a temporary 42" bypass pipe would be constructed for this purpose.

Carol Henderson inquired as to the time of year the project would be constructed. G. Fortin said he anticipates construction to take place in late summer, low flow times. C. Henderson went on to express concerns about construction taking place in Spring as this stream may qualify as a smelt stream. C. Henderson asked when the anticipated Advertising date for this project would be. Jim Kirouac responded that at this time the project Ad Date was anticipated to be in Spring 2016.

C. Henderson inquired on the purpose of the baffles. G. Fortin explained they were there to hold material in the box to replicate the natural stream bottom. The baffles themselves will not be exposed. Hydraulic analysis was used to make the determination to include these baffles. C. Henderson noted that while not mentioned on the NHB document, this area is potentially a prime location for wood turtles. C. Henderson asked if the pipe would match the existing culvert grade. G. Fortin explained that the proposed culvert's vertical profile would actually improve flow through the pipe by eliminating the existing drop/perch of the existing culvert.

Gino Infascelli inquired if anything would be done to accommodate and stabilize the drainage coming down the hill. G. Fortin said that a swale could be constructed to accommodate this. G. Infascelli also suggested having the prime wetlands re-delineated and to have the prime wetlands corrected on the plans when submitting the wetland application.

Lori Sommer inquired if invasive species were present in the project area. G. Fortin explained that none had been noted on previous site visits. The most recent site visit being noted as Summer 2014.

Matt Urban and L. Sommer talked about the need to consider permanent length impacts to bank with the potential to consider mitigation credits for restoring new banks with salvaged plantings, etc.

M. Urban asked if everyone was in a consensus of being okay with the sizing, embedment, and proposed alignment of the proposed culvert, Alternative 5B. All responded yes.

G. Infascelli ended by noting to minimize tree cutting as to not open up the project area too much. G. Fortin responded by stating we would restore the area to the original condition when the project was complete.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Canterbury, Non-Federal, 40178

Kirk Mudgett provided an overview of the project. The project includes reconstruction of the State owned portion of Intervale Road in Canterbury to resolve ongoing issues with maintenance of the gravel roadway and to improve the road condition in preparation for turning over the road section to the Town of Canterbury. The Town of is willing to take over maintenance of the road section, if NHDOT paves the section. The road reconstruction will consist of placing 12" of crushed gravel and 3" of pavement over of the approximately 0.5 mile State owned gravel section to match the portions to the north and south. The paved section would be 20 feet wide. The intention is to match the existing roadway when possible, but in some areas to achieve the 20 feet width, the road will need to be widened, necessitating cutting into banks. The project will include replacement of 3 existing metal culverts and addition of one new culvert. K. Mudgett shared the current project plans and photos taken during the winter.

There is a natural spring that comes out of the embankment adjacent to the roadway; the water from this spring flows in the road ditch for approximately 1,000 feet. The preferred option for managing water from the spring that is currently causing the roadway to be saturated is to utilize underdrain to redirect the water that is impacting the roadway from the embankment. Matt Urban explained that there is perennial flow in the ditch. The underdrain would lead to a lack of flow in the stream/road ditch. Lori Sommer inquired if there is a defined channel. M. Urban explained that there is not. The question at hand is, would the impacts to the water flowing in the ditch by utilizing underdrain to move the water to the other side of the road be considered stream impact and, if so, would mitigation be required. K. Mudgett described concerns that without underdrain, any pavement placed would likely break up due to the water in the roadbed. K. Mudgett stated that the underdrain would be placed as close to the surface as it can safely be placed. There was discussion of underdrain and how clogging of the underdrain is prevented. North of this area there is a spring fed flow, but it crosses the roadway through an existing culvert.

The group discussed a stream on the southern side of the project area that has a well-defined channel that travels through an existing culvert that will be replaced. Carol Henderson inquired about culvert replacements. K. Mudgett explained that they will potentially be larger, but still within the confines of work that can be accomplished under the Routine Roadway Maintenance Activities Notification.

Gino Infascelli asked for a description of stream impacts from the project as proposed. M. Urban explained that the stream flowing through the ditch line would be impacted, but the stream on the southern side of the road will not be impacted.

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: October 21st, 2015

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Matt Urban
Ron Crickard
Anthony Weatherbee
Mark Hemmerlein
Kerry Ryan
David Scott
Jim Kirouac
Cheryl Rasmussen
Matt Healey
Jennifer Reczek
Bob Landry
Ron Kliener
Meli Dube

Army Corps of Engineers

Michael Hicks
Michael Wierbonks
Michael Kamnski
Chris Marron

NHDES

Gino Infascelli
Lori Sommer
(Gillford/Farmington only)
Corey Clark

NH Fish & Game

Carol Henderson

**NH Natural Heritage
Bureau**

Amy Lamb

Stantec

Timothy Adams
Michael Hazelett

CLD

John Byatt

Town of Farmington

Dale Sprauge

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(When viewing these minutes online, click on a project to zoom to the minutes for that project)

area and M. Dube indicated that coordination with the BOE Cultural Resources Program is ongoing.

Amy Lamb, NHHB, indicated that a new DataCheck review request should be submitted to include proposed bridge work and possible impacts to salt marshes, as these are exemplary natural communities. Lori Sommer, NHDES, agreed that no mitigation will be necessary for the work within jurisdictional wetland areas.

This project has not been previously reviewed at the Natural Resources Agency Meeting.

Gilford, 16297, X-A003(033)

Tobey Reynolds, NHDOT, gave a brief history of the project including a summary of the April 15, 2015 Natural Resource Agency Meeting at which a preferred alternative was decided upon for the design. The existing 9'x6' box culvert carries West Alton Brook under NH Route 11A just east of the Gilford/Alton Town line. This is a Tier 3 stream located within a 1.6 square mile watershed with associated prime wetlands. This structure was constructed in 1930, is undersized and in poor condition, which makes maintenance of the area very difficult. The chosen alternative proposes a 16' wide, 8' tall closed bottom box culvert with a 2' embedment relocated on a skew to more adequately match the natural stream channel.

Meli Dube, NHDOT, discussed two of the major remaining environmental concerns: relocation of the prime wetland boundary and mitigation for stream and bank impacts. An attempt to re-delineate the prime wetland boundary was made in 2008 based on an assessment of the functions and values of the prime wetland and a field inspection report by Gino Infascelli, NHDES. M. Dube discussed why the current prime wetland boundary does not seem accurate and why the proposed project will not negatively impact the functions and values of the prime wetland. Primarily, the existing prime wetland boundary includes the previously disturbed roadway and an area downstream from the crossing, neither of which contribute value to the wetland. Additionally, increasing the size of the culvert to be compliant with the NHDES Stream Crossing Rules (Env-Wt 900), relocating the culvert to more adequately match the natural stream, removing the existing 8" perch at the outlet and embedding the structure with natural materials to simulate the stream bottom will improve the identified functions of the wetland. L. Sommer, NHDES, agreed that all prime wetland impacts outside of the stream are temporary and therefore do not require mitigation. G. Infascelli agreed that the current prime wetland boundary is inaccurate and suggested consulted Env-Wt 700 for instructions to proceed with a re-delineation. G. Infascelli also indicated that onsite mitigation may be required for prime wetland impacts within the stream. M. Dube reminded the committee that mitigation was discussed at the April, 2015 meeting and L. Sommer had suggested salvaging acceptable vegetation for stabilizing the new bank. M. Dube used the plans to demonstrate that most of the abandoned bank and channel will be replaced with new bank and channel, which shall be appropriately constructed and stabilized using the salvaged vegetation when appropriate. L. Sommer agreed that these areas will not require mitigation, however, new plans comparing the existing and proposed OHW and TOB will be necessary to establish the length of abandoned stream that is not being replaced and will therefore require mitigation. Stantec will create these plans and M. Dube will follow up with G. Infascelli and L. Sommer. G. Infascelli

indicated that the wetland permit will require an additional 30 days for public review and appeal due to the presence of prime wetlands.

G. Infascelli asked what is being done to improve water quality and treat stormwater runoff in the project area. T. Reynolds indicated that stormwater will sheet flow off of the roadway on the stabilized roadside and banks. G. Infascelli indicated concern regarding an existing dysfunctional berm that channels sediment from the roadway and into the stream. T. Reynolds confirmed that the berm can be flattened.

Farmington, 16146, X-A001(152)

Bob Landry provided a very brief project history, as this project has been presented at the resource meeting on several prior occasions. The project is located on NH Route 153 over the Cochecho River. B. Landry explained that ACOE has determined that the current situation puts the Town of Farmington in non-compliance. As such, the ACOE has requested that the Town restore the channel + remove the shoals build up.

B. Landry presented a photo of the shoal and indicated that the shoal was approximately 300' long and 15' wide. (A subsequent field visit determined the shoal to be more accurately about 140' and 10-15' wide.)

Michael Hicks echoed B. Landry's statements indicating the ACOE wants the shoals to be removed.

Gino Infascelli asked why the ACOE has determined the levee/shoals to be deficient. He asked if there were any records available indicating why.

John Byatt indicated that it was his understanding that the ACOE viewed the shoals as decreasing the capacity of the channel.

Lori Sommer asked about specific details regarding the channel and bank impacts. She asked what hydraulic studies were indicating what would happen if the shoal was removed vs. left in place.

G. Infascelli asked about how much material needed to be removed.

B. Landry indicated that it would be approximately 6" to 1' in depth of material that needs to be removed.

G. Infascelli reiterated the importance for them to be able to justify the "Need".

B. Landry indicated that there were legal documents that required maintenance of the levee between the Town and the ACOE. As such, B. Landry indicated the need is based on a federal requirement. B. Landry indicated that the Department would get the reports and/or any information regarding the agreement between the ACOE and the Town to DES to assist in documenting the need.

G. Infascelli indicated that there were invasive species in the project area and stated that they would need to be addressed under this project.

B. Landry indicated to the group that the Department would further look into completing a hydraulic study that looks at the before and after effects of removing the shoal.

L. Sommer reminded the Department that they should coordinate with the Cochecho River Advisory Committee.

Melilotus Dube

From: Melilotus Dube
Sent: Friday, March 25, 2016 8:25 AM
To: 'Sommer, Lori'
Cc: Kathleen Corliss; Jim Kirouac; Tobey Reynolds
Subject: RE: NHDOT Gilford 16279 Mitigation Discussion: NEW AMOUNT

Lori,

I am writing to inform you that we have had a change in impact area since our meeting on 2/24/16 and the resulting mitigation calculation below. We actually decreased our permanent impact area and added temporary impact area to the outlet of our clean-water bypass. However, even though the permanent impact to bank and channel decreased, our proposed new bank and channel length decreased as well so the net loss of bank and channel is actually greater and will increase the mitigation.

Please see the following calculations, which use the same method agreed upon in our previous meeting.

Top Of Bank	Existing	Proposed	A
Inlet Left	57	36	-21
Inlet Right	89	50	-39
Outlet Left	66	47	-19
Outlet Right	41	29	-12
Total	253	162	91 l.f. of bank lost

OHW	Existing	Proposed	A
Inlet Left	58	40	-18
Inlet Right	69	51	-18
Outlet Left	42	45	+3
Outlet Right	40	35	-5
Total	209	171	38 l.f. of channel lost, 23 l.f. for mitigation calculation

Again, based upon our previous agreement, we will use only the longest length of stream channel impact, instead on both the left and right OHW. As such, our calculation will be based on 91 l.f. of bank impact and 23 l.f. of channel impact.

$$91 \text{ l.f.} + 23 \text{ l.f.} = 114 \text{ l.f.}$$

$$114 \text{ l.f.} \times \$200 = \$22,800.00$$

$$\$22,800 + 20\% = \$27,360.00 \text{ total mitigation cost}$$

Please let me know if you have any questions regarding this new number.

Thanks

Meli

From: Sommer, Lori [<mailto:Lori.Sommer@des.nh.gov>]
Sent: Friday, March 04, 2016 2:32 PM

To: Melilotus Dube
Subject: RE: NHDOT Gilford 16279 Mitigation Discussion

Yes, that revised number is appropriate. Thanks Meli,

Lori

From: Melilotus Dube [mailto:MDube@dot.state.nh.us]
Sent: Monday, February 29, 2016 9:49 AM
To: Sommer, Lori
Subject: NHDOT Gilford 16279 Mitigation Discussion

Lori,

To summarize our meeting regarding mitigation for wetland impacts associated with the Gilford 16279 project:

- The majority of the wetland impacts are to the channel and banks of West Alton Brook associated replacing the existing culvert with a larger, stream crossing rules compliant structure which will be relocated to better match the existing stream bed. As such, NHDOT shall pay appropriate mitigation for the net loss of stream bank and channel, which includes \$200 per linear foot of impact to each bank and the channel.
- See the following summary of stream impacts:

Top Of Bank	Existing	Proposed	Δ
Inlet Left	57	36	-21
Inlet Right	89	50	-39
Outlet Left	68	67	-1
Outlet Right	61	53	-8
Total	275	206	69 l.f. of bank lost

OHW	Existing	Proposed	Δ
Inlet Left	50	40	-10
Inlet Right	69	51	-18
Outlet Left	62	65	+3
Outlet Right	60	55	-5
Total	241	211	30 l.f.

Our discussion on 2/24/26 was based on the following:
 $(69 \text{ l.f. of impact} \times \$200) + 20\% = \$23,760$ in mitigation for this project.

However, after further discussion, Matt and I realized that linear feet of impact is supposed to be based on impacts to the left bank, right bank and channel (three #s) but we calculated mitigation based on left bank, right bank, left OHW and right OHW (4 #s). We are willing to use the longer length of stream channel impact at the inlet and outlet in the calculation, however, we don't feel that it is fair to include both impacts to the left OHW and right OHW

As such, we would like to consider our impacts to be calculated based on 22 l.f. bank left (inlet + outlet), 47 l.f. bank right (inlet + outlet) and 23 l.f. of channel (longest impact at both inlet and outlet).

$22 + 47 + 23 = 92 \text{ l.f. of impact}$

$92 \text{ l.f.} \times \$200 = \$18,400$

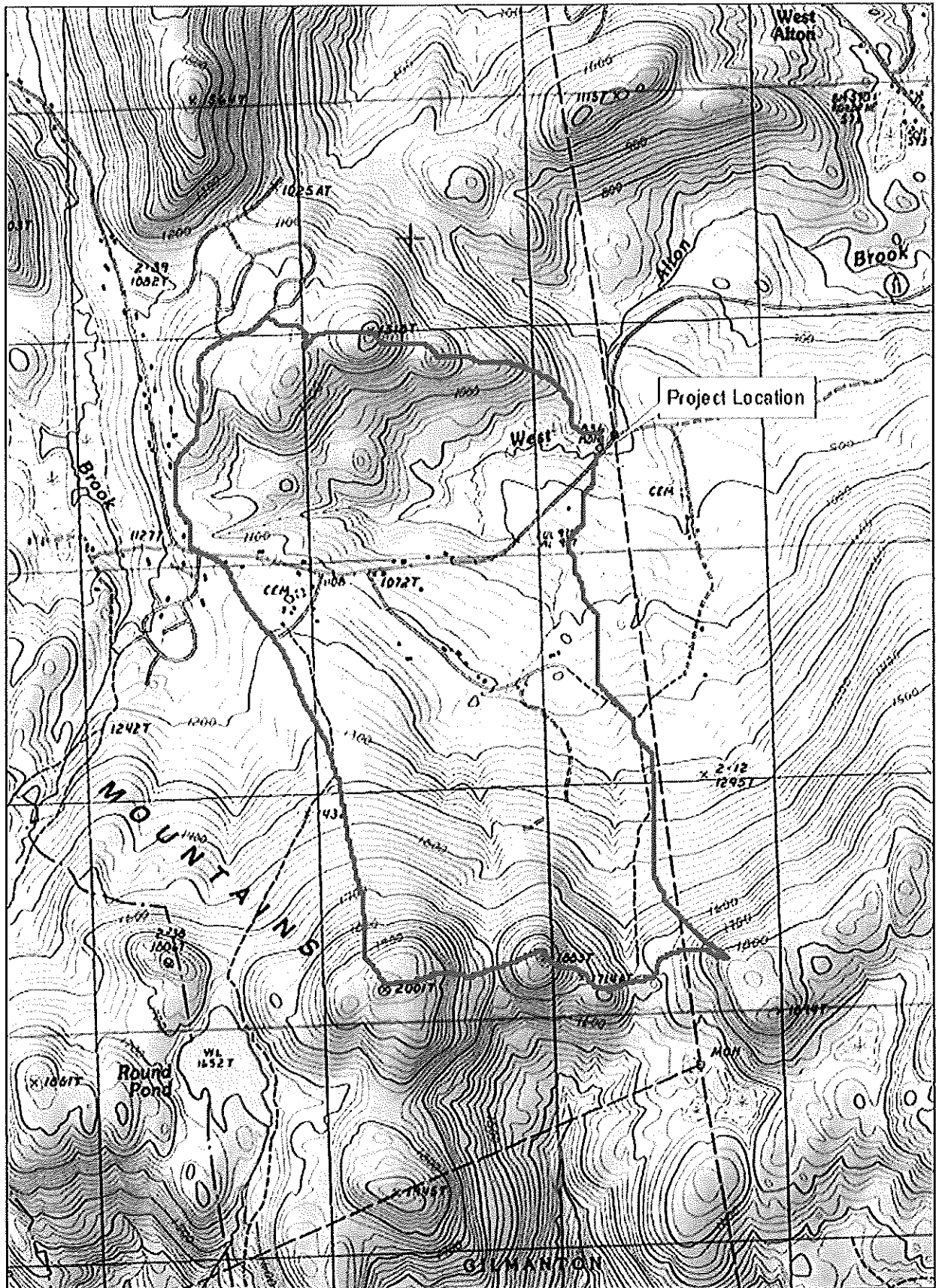
$18,400 + 20\% = \$22,080.00$ in mitigation for this project.

Do you agree with the new \$22,080.00 calculation for mitigation based on bank left, bank right and channel impacts?

Thanks

filed

Gilford 16279 - Watershed Boundary



0 0.25 0.5 1 Miles

1:24,000

Bureau of Environment Stream Crossing Assessment Report

Project: Gilford

Tier: 3

Assessment completed by: BOE

Date assessment completed: 7/21/2011

Rosgen Stream Classification: At Crossing: C3b
At Ref Reach: B3

Watershed Size (acres): 1.58 Sq Mi.

Bankfull Width: At Crossing: 17.6'
At Ref Reach: 12'

Environmental consideration resulting in Tier 3 classification? ☒ Yes ☐ No

If yes, what is the consideration? Prime Wetland

Can it be mitigated down to watershed-based tier? ☐ Yes ☒ No

If yes, how? N/A

Special considerations based on Rosgen Stream Type (from the NH Stream Crossing Guidelines):

Type B streams display moderate sinuosity, slope, width/depth ratios, and entrenchment. This generally stable stream type commonly consists of riffles and rapids and occasional scour pools. Type B streams are often found in forested areas with flood plain vegetation moderately influencing channel stability. Streambank erosion is typically considered low and sensitivity to disturbance is often low to moderate. Fish habitat in this channel type is often attributed to scour pools developed by large woody material.

Stream crossings commonly occur over B and C type channels in New Hampshire because they tend to occur in valleys that are conducive to road building and development. From a stream crossing perspective, B type streams are a transition in design issues between A and C type streams. Approaches to crossing a B type stream vary with the size of the flood plain. At one end of the spectrum are B type streams with lower entrenchment ratios (1.4). The relatively narrow flood-prone area may be accommodated with a single opening. At the other end of the spectrum are the B type streams with entrenchment ratios of up to 2.1. These streams behave more like C type streams, with lower slopes and wider flood plains. The flood-prone area in relation to the bankfull width may be too wide for a single opening and should be either spanned or accommodated with flood plain drainage structures. In either case, an analysis of bedload capacity will ensure that the structure design will not impact sediment transport capacity through the stream reach.

The design elements checked below are required by the NHDES Stream Crossing Rules for the subject stream crossing. If the project cannot incorporate these design elements, the permit application must include a Technical Report for an alternative design pursuant to Env-Wt 904.09. Please contact the Bureau of Environment for further guidance.

Required design elements:

- ☒ Structure size: $1.2X \text{ Bankfull Width} + 2' = 16''$
- ☒ Span-structure or 3-sided culvert (not a closed structure)
- ☐ Embedded culvert or pipe arch

- ☒ Simulation of a natural stream channel through the structure (This would be based in part on the attached longitudinal profile, average bankfull dimensions of the reference reach, and existing substrate.)
- ☒ Bed forms and streambed characteristics necessary to maintain comparable water depths and velocities through the structure as occur upstream and downstream.
- ☒ Vegetated bank on both sides of the watercourse
- ☒ Accommodate 100-year flood and sediment transport
- ☒ Preservation of natural alignment and gradient of stream channel.

Notes: A 16' span structure or 3-sided culvert with channel simulation through the structure is the recommended structure based on the stream crossing guidelines. If this is not practicable as defined in Env-Wt 101.69 you can apply for a permit under the alternative design rules. You may begin to prepare an application for a structure of this size OR contact the Bureau of Environment to move forward with the alternative design process.

NH Department of Transportation
Bureau of Highway Design
Gilford 16279 (Fed. No. X-A003(033))

Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings

New Tier 2 Crossings:

Replacement Tier 2 Crossings that have a history of flooding:

New & Replacement Tier 3 Crossings

Please describe how the project meets the following criteria:

(a) The crossing shall be designed in accordance with the NH Stream Crossing Guidelines.

Based on stream crossing rules a 16' wide replacement structure is recommended. The estimated minimal length would be roughly 35' to accommodate 2 – 11' travel lanes with 4' shoulders plus guardrail. Note that several additional issues warrant consideration in regard to structure replacement: the current culvert does not align well with the natural stream geometry at the inlet; two driveways immediately east of the present culvert make protection of the clear zone over the culvert a design challenge and concern; and the location includes a municipal prime wetland.

The proposed alternative is an 43' long x 16' wide x 8' high concrete box embedded two feet into the streambed, which also allows greater capacity than the existing 9' x 5' non-embedded box culvert. This design is compliant with the NH Stream Crossing Rules.

(b) The design shall include bed forms and stream bed characteristics necessary to cause water depths and velocities within the crossing at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the crossing.

The 2' embedment of the proposed culvert will allow for placement of streambed material comparable to that found upstream and downstream. In addition, the proposed culvert is skewed to eliminate the existing misalignment with the natural stream channel at the existing crossing.

(c) There shall be vegetated banks upstream and downstream of the crossing.

Transplanting existing material from disturbed areas was considered, but the bank to be disturbed is forested and therefore not conducive to transplanting. Since transplantation is not practical, mulching and seeding will be used to establish vegetation upstream and downstream of the crossing.

(d) The natural alignment and gradient of the stream channel shall be preserved so as to accommodate natural flow regimes and the functioning of the natural floodplain.

The proposed design actually restores the natural alignment of the stream channel, by placing the proposed culvert at a skew to eliminate the misalignment in the stream channel at the existing crossing. Overall gradient of the stream channel will be preserved.

(e) The 100-year flood frequency shall be accommodated to ensure that there is (1) no increase in flood stages on abutting properties and (2) flow and sediment transport characteristics will not be affected in a manner that could adversely affect channel stability.

The proposed culvert accommodates the 100-year flood and improves capacity at this crossing. Re-alignment of the stream is proposed to better accommodate flow. Erosion control strategies will be used to stabilize the proposed channel both during work and permanently.

(f) A natural stream channel shall be simulated through the structure.

The proposed culvert will be embedded 2' to allow placement of appropriate streambed materials to simulate a natural bottom.

(g) Sediment transport competence shall not be altered.

The proposed streambed will match into the gradient of the existing stream; the proposed culvert opening is of recommended size and will include appropriate streambed materials. Sediment transport competence will be maintained through the project area.

A Tier 2 stream crossing shall be a span structure, pipe arch embedded with stream simulation, open-bottom culvert with stream simulation, or closed-bottom culvert embedded with stream simulation.

A Tier 3 stream crossing shall be a span structure or an open-bottom culvert with stream simulation.

The proposed crossing is a span structure with a 2 foot embedment with appropriate materials to simulate a natural stream bottom.

If any of the above criteria cannot be met, approval for an alternative design must be requested and a technical report (Env-Wt 904.09) must be included with the application package.

This project meets all criteria for Env-Wt 904.05 and does not require Alternative Design form (Env-Wt 904.09).



New Hampshire Natural Heritage Bureau

To: Melilotus Dube
7 Hazen Drive
Concord, NH 03301

Date: 2/4/2016

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 2/4/2016

NHB File ID: NHB16-0350

Applicant: Melilotus Dube

Location: Tax Map(s)/Lot(s):
Gilford

Project Description: Replacement of existing 1930s era 31' x 9' x 5' concrete box culvert with 43' x 16' x 8' (2' embedded) concrete box culvert, placed on skew to match overall natural course of West Alton Brook.

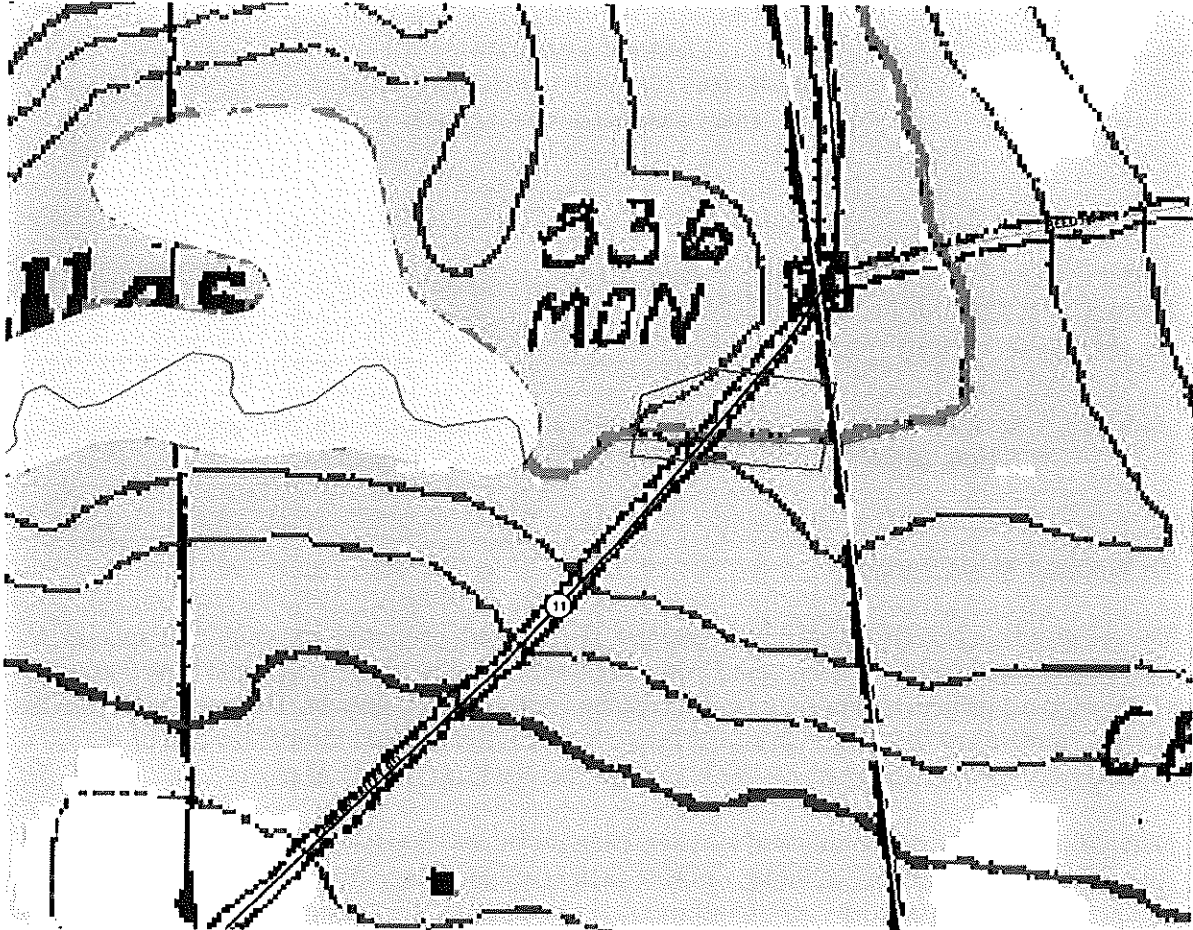
The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

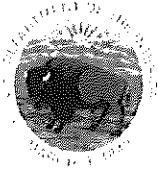
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

This report is valid through 2/3/2017.



MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB16-0350





United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-0913

February 05, 2016

Event Code: 05E1NE00-2016-E-01245

Project Name: Gilford 16279

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Gilford 16279

Official Species List

Provided by:

New England Ecological Services Field Office

70 COMMERCIAL STREET, SUITE 300

CONCORD, NH 03301

(603) 223-2541

<http://www.fws.gov/newengland>

Consultation Code: 05E1NE00-2016-SLI-0913

Event Code: 05E1NE00-2016-E-01245

Project Type: TRANSPORTATION

Project Name: Gilford 16279

Project Description: Replacement of existing 31'x9'x5' concrete box culvert with 43'x16'x8' (2' embedded) concrete box culvert, placed on skew to match overall natural course of West Alton Brook.

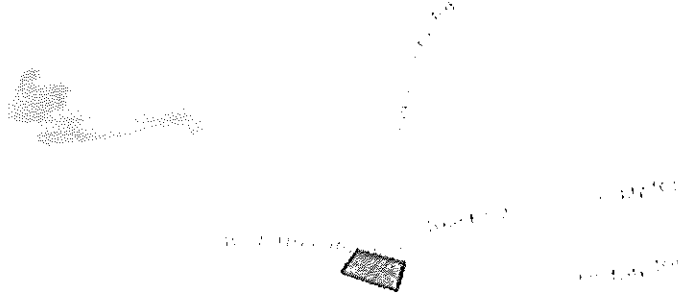
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Gilford 16279

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-71.32312417030333 43.53358880702415, -71.32351577281952 43.53320379024701, -71.32212102413177 43.53286932923337, -71.32193863391876 43.53339046535503, -71.32312417030333 43.53358880702415)))

Project Counties: Belknap, NH



United States Department of Interior
Fish and Wildlife Service

Project name: Gilford 16279

Endangered Species Act Species List

There are a total of 2 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Flowering Plants	Status	Has Critical Habitat	Condition(s)
Small Whorled pogonia (<i>Isotria medeoloides</i>)	Threatened		
Mammals			
Northern long-eared Bat (<i>Myotis septentrionalis</i>)	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: Gilford 16279

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Melilotus Dube

From: Melilotus Dube
Sent: Tuesday, March 29, 2016 12:14 PM
To: Susi_vonOettingen@fws.gov
Cc: Rebecca A. Martin
Subject: NHDOT Project: Gilford 16279, NLEB Range-wide Programmatic Information Consultation
Attachments: 2016 no species present ltr.pdf; 16279 FHWA_BA_ProjectSubmittalForm021016.pdf; bridge assessment photos.docx; NH species by town.pdf; Official_Species_List_NEW ENGLAND ESFO_05_Feb_2016.pdf; NLEB bridge assessment form.pdf; 16279 topo.pdf

Hello Susi,

Please find attached the Range-wide Programmatic Informal Consultation for Northern Long-eared Bat Project Submittal Form for the subject project.

This project involves replacing the currently deteriorated, undersized and misaligned concrete box culvert carrying NH Route 11A (Cherry Valley Road) over West Alton Brook in the Town of Gilford. The work area will be limited to the stream banks and channel, as well as the adjacent roadway for shoulder and slope leveling to tie in the new crossing, which will be extended and relocated on a skew to better match the natural condition of the stream. Minimal clearing will occur on the stream banks which will include some suitable habitat trees. This project meets the criteria for the Range-wide Programmatic Informal Biological Assessment and is a **May Affect, Not Likely to Adversely Affect** project based on the use of the time-of-year restriction on clearing which will occur during the winter hibernation season from September 1 to April 14.

I am also attaching the supplementary USFWS IPaC tool Official Species List, USFWS Section 7 Online Review Tool documentation regarding small whorled pogonia as indicated on the IPaC report, the completed Bridge Assessment form and supporting pictures as well as a topographic location map.

Please let me know if you need any additional information to complete your review.

Thank you,
Meli

Melilotus M. Dube
Environmental Manager
NHDOT Bureau of Environment
7 Hazen Drive
Concord, NH 03301
(603) 271-1612
mdube@dot.state.nh.us

**Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and
Federal Transit Administration (FTA)**

**Range-wide Programmatic Informal Consultation for
Indiana Bat and Northern Long-eared Bat**

**Project Submittal Form for FHWA, FRA, FTA, and
Transportation Agencies *Updated February 2016***

In order to use the programmatic informal consultation to fulfill Endangered Species Act consultation requirements, transportation agencies must use this submittal form to submit project-level information for all may affect, not likely to adversely affect (NLAA) determinations to the appropriate U.S. Fish and Wildlife Service (Service) field office prior to project commencement. For more information, see the Standard Operating Procedure for Site Specific Project(s) Submission in the User's Guide.

In submitting this form, the transportation agency ensures that the proposed project(s) adhere to the criteria of the range-wide programmatic informal BA. Upon submittal of this form, the appropriate Service field office may review the site-specific information provided and request additional information. If the applying transportation agency is not notified within 14 calendar days of emailing the Project Submittal Form to the Service field office, it may proceed under the range-wide programmatic informal consultation.

Further instructions on completing the submittal form can be found by hovering your cursor over each text box.

1. Date: March 29, 2016

2. Lead Agency: FHWA

This refers to the Federal governmental lead action agency initiating consultation; select FHWA or FRA as appropriate

3. Requesting Agency: NHDOT

a. Name: Meli Dube

b. Title: Environmental Manager

c. Phone: (603) 271-1612

d. Email: mdube@dot.state.nh.us

4. Consultation Code¹: 05E1NE00-2016-SLI-0913

5. Project Name(s): Gilford 16279

¹ Available through IPaC System Official Species List: <https://ecos.fws.gov/ipac/>

6. Project Description:

Please attach additional documentation or explanatory text if necessary

Replacement of existing 1930's era 31' b 9' x 5' concrete box culvert with 43' x 16' x 8' (2' embedded) concrete box culvert on NH Route 11A over West Alton Brook in the Town of Gilford. The new crossing will be placed on a skew to match the overall natural course of West Alton Brook. The overall project area is less than 1 acre and will require minimal tree clearing, some of which are larger than 3" in diameter at breast height and are therefore suitable northern long-eared bat habitat. The Town of Gilford does not contain any known hibernacula or maternity roost trees. All clearing will be done during the winter hibernation from September 1 to April 14. A Bridge Assessment did not indicate the presence of bats in any area of the existing crossing.

7. Other species from Official Species List:

- ✓ No effect – project(s) are inside the range, but no suitable habitat – see additional information attached IPaC identified small-whorled pogonia, however, the USFWS Section 7 Online Review tool indicated that this species does not occur in the Town of Gilford and will not be affected by the project.

May Affect – see additional information provided for those species (either attached or forthcoming)

8. For Ibat/NLEB, if Applicable, Explain Your No Effect Determination

No effect – project(s) are outside the species' range (submittal form complete)

No effect – project(s) are inside the range but no suitable summer habitat (submittal form complete)

No effect – project(s) are completely within existing road/rail surface and do not involve percussive or other activities that increase noise above existing traffic/background levels (submittal form complete)

No effect – project(s) includes maintenance, alteration, or demolition of bridge(s)/structure(s) and indicate(s) no signs of bats from results of a bridge/structure assessment (submittal form complete)

No effect – project(s) do not involve construction activities (e.g., bridge assessments, property inspections, development of planning and technical studies, property sales, property easements, and equipment purchases) (submittal form complete)

Otherwise, please continue below.

9. For Ibat/NLEB, if Applicable, Explain Your May Affect, Not Likely to Adversely Affect Determination (without implementation of AMMs)

NLAA – project(s) are inside the range but negative bat presence/absence (P/A) surveys (submittal form complete)

NLAA – project(s) conducted completely within existing road/rail surface and involve percussive activities (submittal form complete)

NLAA – project(s) are within areas that contain suitable forested habitat but do not remove or alter trees (e.g., landscaping rest areas, mowing, brush removal, sign or guiderail replacement, and stormwater management) (submittal form complete)

NLAA – project(s) of slash pile burning (submittal form complete)

NLAA – wetland or stream protection activities are associated with wetland mitigation and do not clear suitable habitat (submittal form complete)

Otherwise, please continue below.

For Ibat/NLEB, if applicable, continue to complete the submittal form to explain your may affect, not likely to adversely affect determination (with implementation of AMMs)

10. Affected Resource/Habitat Type

✓ Trees

✓ Bridge

Other Non-Tree Roosting Structure (e.g., building)

Other (please explain):

11. For Tree Removal Projects:

a. Please verify that no documented roosts or foraging habitat will be impacted and that project is within 100 feet of existing road surface: ✓

b. Please verify that all tree removal will occur during the inactive season²: ✓

c. Timing of clearing: September 1 2016 - April 14 2017

d. Amount of clearing: < 1 acre

² Coordinate with local Service field office for appropriate dates.

12. For Bridge/Structure Work Projects:

- a. Proposed work: Bridge replacement
- b. Timing of work: Spring/summer 2017
- c. Evidence of bat activity on bridge/structure:
None, Bridge Assessment completed on March 29, 2016
- d. If applicable, verify that superstructure work will not bother roosting bats in any way:
N/A- Bridge Assessment Indicated no bat usage
- e. If applicable, verify that bridge/structure work will occur only in the winter months:
N/A- Bridge Assessment Indicated no bat usage

13. Please confirm the following:

Proposed project(s) adhere to the criteria of the range-wide programmatic informal BA (see Section 2.0). ✓

All applicable AMMs will be implemented, including³:

Tree Removal AMM 1: ✓

Tree Removal AMM 2: ✓

Tree Removal AMM 3: ✓

Tree Removal AMM 4: ✓

Bridge AMM 1:

Bridge AMM 2: ✓

Bridge AMM 3:

Bridge AMM 4:

Structure AMM 1:

Structure AMM 2:

Structure AMM 3:

Structure AMM 4:

Lighting AMM 1: ✓

Lighting AMM 2:

³ See AMMs Fact Sheet (Appendix C) for more information on the following AMMs.

APPENDIX C: Bridge/Structure Assessment Form

Bridge Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside, from activities above that bore down to the underside, or that could impact expansion joints, from deck removal on bridges, or from structure demolish. Each bridge/structure to be worked on must have a current bridge inspection. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the US Fish and Wildlife Service, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing structures prior to allowing any work to proceed.

DOT Project #	Water Body	Date/Time of Inspection
16279	West Alton Brook	3/29/16 8:30 am

Route:	County:	Federal Structure ID:	Bat Indicators Check all that apply. Presence of one or more indicators is sufficient evidence that bats may be using the structure.				Notes: (e.g., number & species of bats, if known. Include the results of thermal, emergent, or presence/absence summer survey)
			Visual	Sound	Droppings	Staining	
11A	Belknap	N/A	no	no	no	no	no indication of bat usage

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures			Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep					Human disturbance or traffic under bridge/in culvert or at the structure	High	Low	None
All crevices >12" deep & not sealed					Possible corridors for netting	None/poor	Marginal	excellent

All guardrails	✓			Evidence of bats using bird nests, if present?	Yes	No	
All expansion joints	N/A						
Spaces between concrete end walls and the bridge deck	N/A						
Vertical surfaces on concrete I-beams	N/A						

Assessment Conducted By: Meli Dube

Signature(s):

Meli Dube

District Environmental Use Only:

Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed a minimum of 1 year prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Informal Consultation, regardless of whether assessments have been conducted in the past. **Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that structure in subsequent years.**
2. Legible copies of this document must be provided to the District Environmental Manager within two (2) business days of completing the assessment.
3. Failure to submit this information will result in that structure being removed from the planned work schedule.
3. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the USFWS, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
4. Estimates of numbers of bats observed should be place in the Notes column.
5. Any questions should be directed to the District Environmental Manager.

Gilford 16279- USFWS Bridge Assessment for Bat Usage Photos
Taken by Meli Dube, NHDOT Bureau of Environment, on March 29, 2016



Figure 1. Inside the existing concrete box culvert

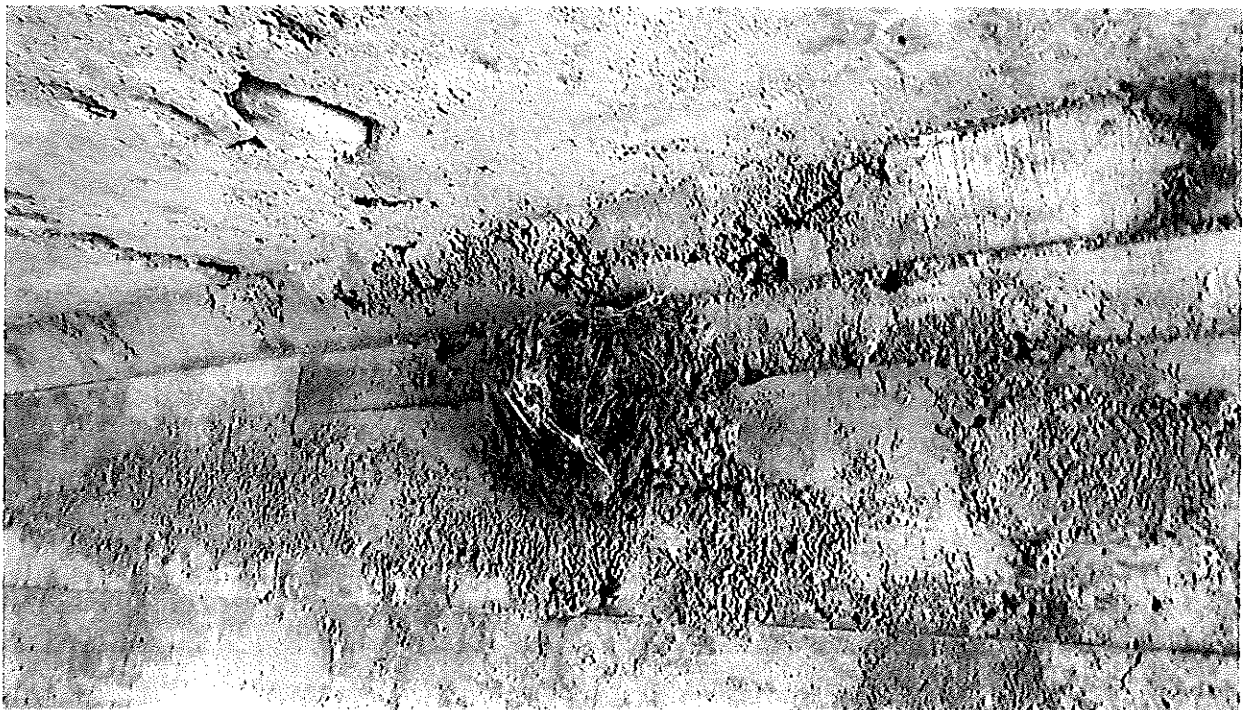


Figure 2. Abandoned birds nest inside the existing concrete box culvert



Figure 3. Spalled concrete at the existing outlet



Figure 4. Existing concrete box culvert outlet, also representative of inlet condition



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>



January 22, 2016

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm> (accessed January 2016)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Maria Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN NEW HAMPSHIRE**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Belknap	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Meredith, Alton and Laconia
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Carroll	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Albany, Brookfield, Eaton, Effingham, Madison, Ossipee, Wakefield and Wolfeboro
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Coos	Canada Lynx	Threatened	Regenerating softwood forest, usually with a high density of snowshoe hare.	All Towns
	Dwarf wedgemussel	Endangered	Connecticut River main channel and Johns River	Northumberland, Lancaster and Dalton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Cheshire	Dwarf wedgemussel	Endangered	S. Branch Ashuelot River and Ashuelot River	Swanzy, Keene and Surry
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Grafton	Dwarf wedgemussel	Endangered	Connecticut River main channel	Haverhill, Piermont, Orford and Lyme
	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Holderness
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hillsborough	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Manchester, Weare
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Merrimack	Karner Blue Butterfly	Endangered	Pine Barrens with wild blue lupine	Concord and Pembroke
	Small whorled Pogonia	Threatened	Forests	Bow, Danbury, Epsom, Loudon, Warner and Allenstown
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN NEW HAMPSHIRE**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Rockingham	Piping Plover	Threatened	Coastal Beaches	Hampton and Seabrook
	Roseate Tern	Endangered	Atlantic Ocean and nesting at the Isle of Shoals	
	Red knot ¹	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal towns
	Small whorled Pogonia	Threatened	Forests	Deerfield, Northwood, Nottingham, and Epping
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Strafford	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Middleton, New Durham, Milton, Farmington, Strafford, Barrington, and Madbury
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Sullivan	Northeastern bulrush	Endangered	Wetlands	Acworth, Charlestown, Langdon
	Dwarf wedgemussel	Endangered	Connecticut River main channel	Plainfield, Cornish, Claremont and Charlestown
	Jesup's milk-vetch	Endangered	Banks of the Connecticut River	Plainfield and Claremont
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

¹Migratory only, scattered along the coast in small numbers

-Eastern cougar, gray wolf and Puritan tiger beetle are considered extirpated in New Hampshire.

-Endangered gray wolves are not known to be present in New Hampshire, but dispersing individuals from source populations in Canada may occur statewide.-There is no federally-designated Critical Habitat in New Hampshire



Victoria F. Sheehan
Commissioner

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



William Cuss, P.E.
Assistant Commissioner

GILFORD
X-A003(033)
16279
RPR7223

No Historic Properties Affected Memo

Pursuant to the NH Division of Historical Resources (NHDHR) response on December 15, 2015 to a Request for Project Review, and for the purpose of compliance with regulations of the National Historic Preservation Act and the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the NH Division of Historical Resources (NHDHR) and the NH Division of the Federal Highway Administration (FHWA) have coordinated the identification and evaluation of historical and archaeological resources with plans to replace the 1930 concrete box culvert carrying NH Route 11A (Cherry Hill Road) over West Alton Brook in the Town of Gilford, New Hampshire. The proposed structure will be relocated on a skew and the slopes stabilized to provide a more natural stream alignment and prevent bank erosion.

The project also includes the relocation of a stone retaining wall fronting the residence in the north-west quadrant of the project area. The stone retaining wall and stone driveway posts, likely originating with the construction of the 1977 residence and associated landscaping, will be moved back immediately adjacent to the property line.

Based on a review pursuant to 36 CFR 800.4, we agree that no historic or archaeological resources are affected in the project area and that no further survey work is needed.

In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds. As there has been an increase in culvert replacements and substantial loss of this resource type, the NHDOT will work with NHDHR and appropriate federal agencies to determine the actions for expanding the stone culvert context to include concrete culverts.

Patrick Bauer 1/15/16
for Patrick Bauer, Administrator
Federal Highway Administration Date

Jill Edelman 12/18/2014
Jill Edelman Date
Cultural Resources Manager

Concurred with by the NH State Historic Preservation Officer:

Elizabeth H. Muzzey 1-21-16
for Elizabeth H. Muzzey Date
State Historic Preservation Officer
NH Division of Historical Resources

c.c. Chris St. Louis, NHDHR Mellottus Dube, DOT
Janie Sikora, FHWA Tobey Reynolds, DOT

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US Army Corps
of Engineers
New England District

U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org , specifically the book Natural Community Systems of New Hampshire .	X	
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area?	14411 SF	
2.7 What is the size of the proposed impervious surface area?	16863 SF	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	47.5% ex., 55.7% prop.	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)		X
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: <ul style="list-style-type: none"> • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html. 	X	
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	n/a	n/a
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.



Figure 1. NH Route 11A East over West Alton Brook



Figure 2. NH Route 11A West over West Alton Brook

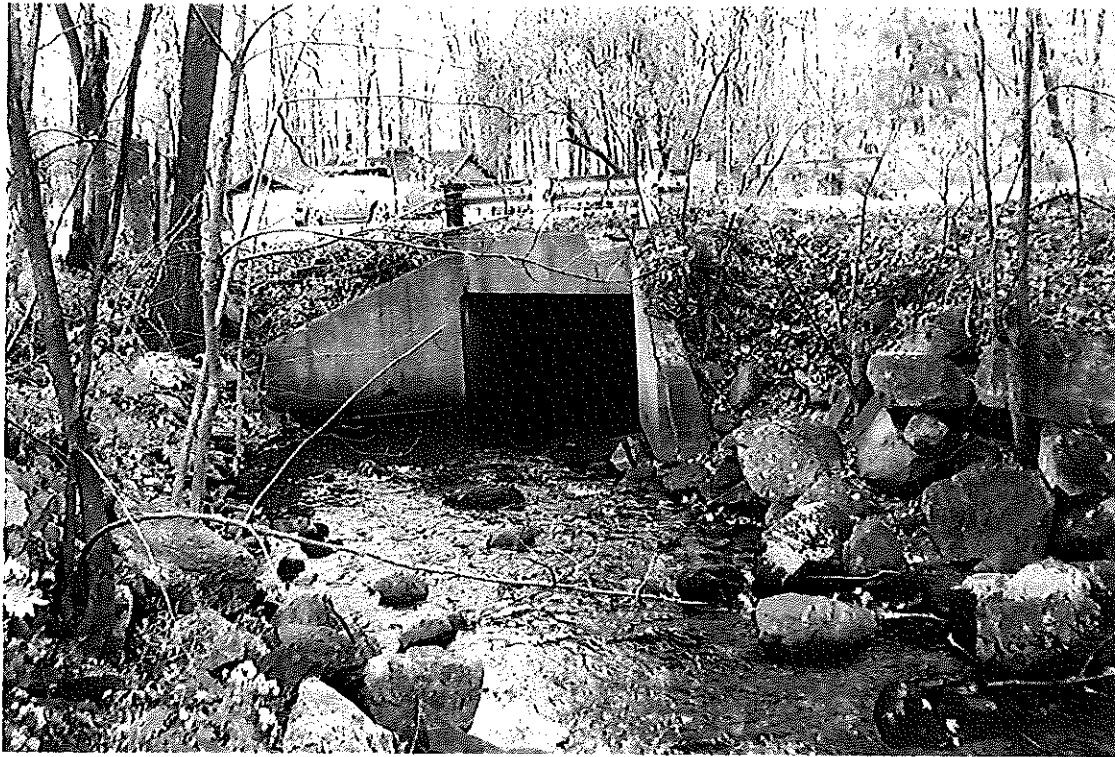


Figure 3. Existing inlet from upstream of crossing showing Impact Locations A, B and H



Figure 4. Existing inlet from crossing showing Impact Locations A, B, H and G



Figure 5. Existing perched outlet from downstream of crossing showing Impact Locations C, E and I



Figure 6. Existing outlet from north-east bank showing Impact Locations C, D, E and I

Reference: NHDOT Project: 16279 - Gilford

The following documents the anticipated general construction sequence for the installation of a 16 x 8' precast concrete bridge under NH Route 11A. It is assumed the project will require a roadway closure for two weeks for the installation of the bridge.

Notes:

- The culvert replacement shall be done during low flow periods.
- The Erosion Control Plan provides a typical construction dewatering and flow control plan. The Contractor shall submit drawings and details showing materials to be used, proposed method of construction, and other details left open to the choice of the Contractor or not fully shown on the plans.
- The contractor shall provide for sumps and wellpoints with temporary pumping as required to construct the footings and headwalls for the new bridge. The contractor shall pump into sediment control basins, sediment bags, or similar measures during the dewatering operations.
- The cofferdam shall meet the requirements of NHDOT for temporary water diversion.

Construction Sequence

1. Install traffic control.
2. Install erosion and perimeter controls at all locations where necessary and as indicated on the Erosion Control Plans.
3. Install a temporary 42" HDPE water diversion pipe 10 feet to the west of the proposed bridge. Inverts to be as shown on the construction drawings or as required to control flow.
4. Construct upstream cofferdam. Cofferdams shall be sufficient size to retain water and provide enclosure for the temporary 42" HDPE diversion pipe and bridge installation.
5. Construct downstream cofferdam and temporary channel protection.
6. Direct flow through the temporary 42" HDPE diversion pipe.
7. Remove the existing culvert and install the new bridge and associated roadway work.
8. Construct upstream stone apron, construct downstream stone apron.
9. Remove downstream cofferdam and temporary channel protection, remove upstream cofferdam, direct flow through the new bridge.
10. Remove the temporary 42" HDPE diversion pipe.
11. Complete all required roadway work.
12. Provide slope stabilization.
13. Remove all erosion and perimeter controls.

PART Env-Wt 404 CRITERIA FOR SHORELINE STABILIZATION

This project involves replacement of an existing 5' x 9' box culvert carrying NH Route 11A over West Alton Brook, with a 16' x 8' embedded concrete box. The increased box size to conform to stream crossing rules, and slight re-alignment to restore the waterway to a more natural stream alignment, will result in placement of stone fill within areas under the jurisdiction of the NH Wetlands Bureau and the US Army Corps of Engineers. The stone fill will be located in the disturbed channel and along the new banks of the proposed structure as shown on the plans.

Pursuant to PART Wt 404 Criteria for Shoreline Stabilization, the following addresses each codified section of the Administrative Rules:

Env-Wt 404.01 Least Intrusive Method

The riverbank stabilization treatment proposed is the least intrusive construction method necessary to minimize disruption to the existing shorelines. The stone in the proposed streambed and banks can be reasonably constructed utilizing general highway construction methods.

Env-Wt 404.02 Diversion of Water

A clear water by-pass structure will be constructed to divert water around the immediate construction area and reconstructed stream channel in conjunction with standard BMP's. Once complete, proposed roadway drainage will allow storm water run-off to flow over vegetated areas prior to entering West Alton Brook. This will minimize erosion of the shoreline.

Env-Wt 404.03 Vegetative Stabilization

- (a) Natural vegetation shall be left intact to the maximum extent possible. Transplanting vegetation from the impacted wooded areas to proposed new streambank was considered, but ruled out due to the poor potential of the species and specimens present for transplant to the new bank areas. All newly developed slopes and disturbed areas will have humus and seed applied for turf establishment, to help stabilize the project area. The only locations being disturbed are the impacted areas on the construction plans.
- (b) The shoreline of West Alton Brook is not tidal in nature.

Env-Wt 404.04 Rip-rap

- (a) Stone fill, as proposed, is shown on the attached plans to protect the channel and bank as necessary. Stable embankments are necessary to maintain the structural integrity of the bridge during all flow conditions.
- (b) (1-5) The minimum and maximum stone size, the gradation, cross sections of the stone fill, proposed location, and other details will be shown on the construction plans. Bedding for the stone fill will consist of natural ground excavated to the proposed underside of the stone fill with geotextile fabric.
- (6) The attached plans indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.
- (7) Stone fill is recommended for the limits shown on the attached plans to protect the banks from erosion during flood flows, from scour during all flows, and slopes greater than 2:1 that have difficulty supporting vegetation.

- (c) This project is not located adjacent to a great pond or water body where the state holds fee simple ownership.
- (d) Stone fill is proposed to extend down to and into the channel bottom to prevent possible undermining of the slope and to provide a more natural streambed channel than the concrete bottom of the box culvert this project replaces.
- (e) The enclosed plan has been stamped by a professional engineer.